

REMARKS

Claims 1-26 were pending in the present application. Claims 1, 3-6, 8 and 10-19 were rejected, claims 22-26 allowed and claims 2, 7, 9, 20 and 21 were objected to in the Office Action dated June 20, 2005. Claims 1, 10 and 18 are amended herein, claims 6 and 7 are canceled and claims 27-34 are added by this amendment. Reconsideration of all rejected claims is requested in light of the amendments made and the arguments presented below.

Claim Rejections under 35 USC 103

Claims 1, 3-6 and 8 were rejected under 35 USC 103(a) as being unpatentable over Aritome et al. (US 5,528,547) in view of Ogura et al. (US 5,650,345). Dependent claim 7 was indicated to be allowable if rewritten in independent form. Claim 1 is amended to include the limitations formerly recited in claim 7 and claim 6, from which claim 7 depends. Thus, claim 1 as amended corresponds to claim 7 rewritten in independent form. Therefore, claim 1 is submitted to be allowable. Claims 6 and 7 are canceled. Claims 1-5, 8 and 9 are submitted to be allowable at least for depending from an allowable base claim.

Claims 10-16, 18 and 19 were rejected under 35 USC 103(a) as being unpatentable over Wu (US 6,689,658) in view of Fukumoto et al. (US Pub. 2002/0096704). Claims 10-16, 18 and 19 are believed to be allowable over the cited references because there is no adequate motivation to combine the references to obtain the claimed combination as indicated by the Office Action.

Claim 10 is amended to include the word “conductive” for clarity. With respect to claim 10, the Office Action acknowledged, “Wu does not teach that the sidewall elements shield the floating gates.” The Office Action cited Fukumoto as teaching, “conductive sidewall elements that shield floating gates.” The motivation cited in the Office action, “to shield an insulating film between a floating gate and a control gate from electric fields as expressly taught by Fukumoto et al. (paragraphs [0028] and [0030]),” would not appear to be achieved by making sidewall elements 310a of Wu of conductive material. The protection of inter poly-insulation described by Fukumoto in paragraphs [0028] and [0030] appears to be achieved by rounding a corner of a floating gate, “an angular portion of the floating gate is rounded, preventing concentration of electric fields,” paragraph [0030]. Thus, this protection appears to depend on the particular shape of the floating gate. No such rounding would appear to be provided by forming sidewall elements 310a of Wu of conductive material.

In addition, forming sidewall elements 310a of Wu of conductive material would appear to make the structure unsatisfactory for its intended purpose. “The proposed modification cannot render the prior art unsatisfactory for its intended purpose,” MPEP 2143.01. Sidewall elements 310a of Fig. 4G(a) of Wu appear to be in contact with both control gate layer 307a and floating gate layer 302a. Thus, fabricating sidewall elements 310a of a conductive material would appear to provide an electrical connection between control gate layer 307a and floating gate layer 320a. This would be undesirable and would appear to make the structure shown unsatisfactory for its intended purpose. In addition, sidewall elements 310a appear to be in contact with common-source bus line 311a and silicide layer 313a. Thus, forming sidewall elements 310a of a conductive material would appear to connect control gate 307a, floating gate 302a and common-source bus line 311a in a way that would prevent floating gate 302a from storing charge and thus make the structure shown unsatisfactory for its intended purpose.

Because no adequate motivation is provided to combine the teachings of Wu and Fukumoto to obtain the claimed combination and because modifying Wu in the manner indicated would appear to make the structure of Wu unsatisfactory for its intended purpose, it is submitted that a *prima facie* case of obviousness has not been made with respect to claim 10. Claim 10 is therefore submitted to be allowable. Claims 11-17 depend from claim 10 and are therefore submitted to be allowable at least for depending from an allowable base claim.

With respect to claim 18, the Office Action conceded, “Wu does not teach that the members shield the floating gates from electrical fields having a component in the bitline direction.” The Office Action cited Fukumoto as teaching “a method of forming floating gates with conductive sidewall spacers that shield the floating gates from electrical fields having a component in the bitline direction.” However, this interpretation of Fukumoto is not well understood. It appears that the sidewall spacers of Fukumoto extend in the bitline direction. “Sidewall spacer 25 is provided on sidewall surfaces, extending in the bit line direction, on both sides of floating gate 4,” paragraph [0059]. See also Figure 1A. Because sidewall spacers extend along sidewall surfaces in the bitline direction, they appear to be interposed between adjacent floating gates in a direction perpendicular to the bitline direction. Given this orientation, it is not seen how Fukumoto discloses shielding from electrical fields having a component in the bitline direction.

In addition, it is not seen how sidewall spacers 25 of Fukumoto are considered to be “shielding” the floating gates. Sidewall spacers 25 appear to act as extensions of floating gate 4 to provide a smooth surface. “The surface shape of the floating gate is smooth, and therefore electric field concentration on an inter poly-insulation film is suppressed,” paragraph [0069]. This does not appear to be “shielding” a floating gate. Therefore, it is submitted that a *prima facie* case of obviousness has not been made with respect to claim 18 because the claim element “members shielding the floating gates from electrical fields having a component in the bitline direction” has not been shown in the cited references. In addition, there appears to be no adequate motivation to modify Wu and the modification of Wu would appear to make the structure unsuitable for its intended purpose as discussed with respect to claim 10 above. Claim 18 is amended to clarify the claim language.

Claim 19 was rejected on similar grounds to those used to reject claims 10 and 18 above. It is submitted that an adequate motivation to combine the references is lacking with respect to claim 19 as with claims 10 and 18. Also, as discussed above, forming sidewall spacers 310a of conductive material would appear to make the structure of Wu unsuitable for its intended purpose.

New claims 27-34 are added and are submitted to be supported throughout the specification and in particular by Figures 6E-6H and the corresponding portions of the written description.

Information Disclosure Statement

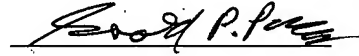
A Supplemental Information Disclosure Statement accompanies this Response. It is requested that the attached PTO Form 1449 be initiated and returned.

CONCLUSION

In view of the amendments and remarks contained herein, it is believed that all claims are in condition for allowance and an indication of their allowance is requested. However, if the

Examiner is aware of any additional matters that should be discussed, a call to the undersigned attorney at: (415) 318-1160 would be appreciated.

Respectfully submitted,

 September 14, 2005

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